

# REVISED BIOLOGICAL RESOURCES AND WETLAND SURVEY REPORT



PROJECT NAME:

**HUKARI TENTATIVE PARCEL MAP**

**TPM - 20830**

**DPLU LOG NO. 04-02-017**

**BONSALL  
SAN DIEGO COUNTY, CALIFORNIA**

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DEPARTMENT OF PLANNING  
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## SUMMARY OF FINDINGS

The Hukari Project proposes to create four lots and a remainder parcel from a 30.0 acre parcel in the Bonsall Community Planning Area. A biological reconnaissance, including a wetland survey, was conducted on 26 August 2004. The proposed project would impact 0.48 acres of isolated Southern Mixed Chaparral.

A total of 1.60 acres of Southern Willow-Cottonwood Riparian Forest, 0.13 acres of Southern Mixed Chaparral, and 1.37 acres of Coast Live Oak Woodland would be conserved on-site in a proposed buffered Biological Open Space Easement. No other sensitive habitats or species were observed on-site or are considered likely to occur. The project site is currently mostly avocado orchards.

Impacts to Southern Mixed Chaparral will be reduced to a level below significant by the purchase of mitigation credits at a county-approved mitigation bank in the region.

Recommendations for Best Management Practices are made to reduce potential indirect and off-site impacts as a result of project implementation.

## INTRODUCTION

The Hukari project is an application for a minor subdivision within the Bonsall Community Planning Area. The application proposes the subdivision of 30.0 acres (APN 125-133-01) into four residential parcels and a remainder measuring from 3.4 to 7.7 net acres. The project site is located west of Interstate 15 and north of West Lilac Road (Figures 1 and 2). The topography of the site is mostly a gentle south-facing slope, with the southeast corner of the site transected by two incised drainages, one of which is shown on the USGS topographical map as an intermittent blue line stream. The site is situated between 575 and 725 feet above sea level (Figure 3). The approximate USGS coordinates of the site are 33°18'N, 117°10'W (Bonsall 7.5 minute series quadrangle). The majority of the site is currently in agriculture (avocado orchard). The areas to the north and west of the site are undeveloped, and the areas to the south and east are developed for agriculture (Figure 4).

This report describes biological resources within the project site and 100 feet beyond on all sides. This report proposes measures to avoid impacts where possible, and mitigation measures to reduce unavoidable impacts to below a level of significance.

## METHODS AND LIMITATIONS

To assess the biological resources of the project I conducted a reconnaissance on 26 August 2004. Conditions were conducive to unrestricted plant and animal observation, with clear skies, temperatures in the high 70s, and wind at 0-3 kts NW. The site visit lasted from 1015 to 1345, during which I was able to examine the entire project site and adjacent areas. Observations on-site were recorded as they were made, and form the basis of this report and the vegetation map. Animals were identified using scat, tracks, burrows, vocalizations, or direct observation with the aid of 10X42 Leica binoculars. Vegetation mapping was conducted in accordance with vegetation community definitions as described in Holland (1986) and Oberbauer (1996). In addition, vegetation mapping on-site was aided by the use of an aerial photograph. Digital photographs were taken on-site (Appendix C). On-site measurements were aided by the use of a Rolatape® Model 300 Distance Measuring Wheel. Measurements taken from the base map provided by the project engineer were taken with a LaSico® Model L-10 Compensating Polar Planimeter or Scale Master Classic® Digital Plan Measure. It should be noted that all vegetation community mapping is verified on the ground to the greatest degree possible in the absence of a systematic land survey. All vegetation areas, boundaries, and fuel modification zone limits are estimates subject to final delineation by a professional land surveyor.

## RESULTS<sup>1</sup>

### Soils

Based on soil conservation service maps (Bowman 1973), the soils for the project site consist primarily of Cienega very rocky coarse sandy loam, 30 to 75% slopes (CmrG), with a small area of Steep gullied land (StG). Although a detailed soil analysis is beyond the scope of this report, on-site examination appeared to confirm the presence of these soil types.

### Botany

As noted above, the primary vegetation community on-site is agriculture. Virtually the entire site, except for the drainages in the southeast corner of the property, have long been used as avocado orchards.

A floral species list compiled from the site surveys is provided in Appendix A.

### Plant Communities

#### Orchards and Vineyards (Holland Code 18100)

A total of 26.42 acres occurs on-site. An area in the southern portion of the site (approximately 10 acres – see Figure 5) was recently cleared of trees and will soon be re-planted. The irrigation system for this area remains intact.

#### Southern Cottonwood-Willow Riparian Forest (Holland Code 61330)

A total of 1.60 acres on-site. This habitat type occupies the narrow incised drainage that transects the southeast corner of the project site. Mature cottonwood trees predominate, with scattered willows and live oaks. Due to the dense canopy, there is little understory.

#### Coast Live Oak Woodland (Holland Code 71160)

This habitat type occurs in the extreme southeast corner of the project site, occupying 1.37 acres. It occurs in an area surrounding a shallow dry drainage feature.

#### Southern Mixed Chaparral (Holland Code 37120)

Currently 0.61 acres on-site. This habitat type occurs in two deep narrow gullies in the center and east side of the project site, draining south into the Southern Cottonwood-Willow Riparian Forest. Laurel sumac *Malosma laurina* is the dominant plant species. A few individual chaparral plants (*i.e.* *Malosma*) are found in the shallow drainage feature

<sup>1</sup> Scientific and common names for plant species are derived from The Jepson Manual, 1993, U.C. Press; scientific and common names for birds from the A.O.U. Check-list of North American Birds, 1998, Allen Press, Inc.

in the southwest corner of the project site, but they are scattered and do not occur in sufficient numbers or density to warrant classification as habitat or a native plant community. Clearly, when the site was cleared for agriculture, these gullies were avoided due to their incised topography.

## **Zoology**

Wildlife recorded during the surveys included common and expected species for the habitats that occur on-site. Nine species of birds, two species of mammals, and two reptile species were detected. A complete list of animals detected on-site can be found in Appendix B.

## **Sensitive Resources**

Sensitive plants or animals are defined here as species of rare, threatened, or endangered status, or depleted or declining species according to the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), or California Native Plant Society (CNPS). Sensitive habitats include those which are considered rare in the region, or support sensitive plants or animals. In addition, species of concern to the County of San Diego that occur or have moderate to high potential to occur on-site are discussed below and in Appendix D.

### **Sensitive Habitats**

Three sensitive habitat types occur within the project site: Southern Cottonwood-Willow Riparian Forest, Coast Live Oak Woodland, and Southern Mixed Chaparral. Southern Cottonwood-Willow Riparian Forest is a wetland habitat protected by the County, U.S. Fish and Wildlife Service, and California Department of Fish and Game. No direct or indirect impacts to this habitat on-site are anticipated. Coast Live Oak Woodland and Southern Mixed Chaparral are also considered sensitive. No direct or indirect impacts to Coast Live Oak Woodland on-site are anticipated, however the project will impact 0.61 acres of Southern Mixed Chaparral.

Surveys of the project site were conducted with special attention to looking for plant and animal species and habitats that are considered sensitive according to the County, USFWS, CDFG, CNPS, and the CDFG's Natural Diversity Database (CNDDB) record for the Bonsall 7.5 minute quadrangle. The site lacks the appropriate habitat to support most of the county and CNDDB sensitive species.

### **Sensitive Plants**

Of the sensitive plant species that were identified in the California Natural Diversity Database as occurring in the project vicinity (Bonsall Quadrangle), none were detected during the site surveys. The likelihood of occurrence on the project site these species was determined to be low because a) they are conspicuous perennial plants that would have been detected during the site surveys, b) appropriate soils and plant communities clearly do not exist on-site, or c) as annual plants they would have been detected during the site surveys.

## Sensitive Wildlife

The only animal species considered sensitive recorded on the project site was the Red-shouldered Hawk *Buteo lineatus*. Those species on the CNDDDB for the Bonsall USGS quad, or on the County of San Diego list of species of concern with a moderate or high likelihood of occurring, are discussed below:

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### LEGEND

Common Name  
*Scientific name*

CNDDDB or County List  
Status

FE = Federal Endangered

FT = Federal Threatened

PE = Proposed Endangered

PT = Proposed Threatened

FSC = Federal Special Concern Species

SE = State Endangered

ST = State Threatened

SR = State Rare

CSC = State Special Concern Species

CEQA = Consideration required

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Red-shouldered Hawk  
*Buteo lineatus*

County List

Red-shouldered Hawks are common and widespread residents and migrants in San Diego County, occurring in a wide variety of habitats including developed orchards and residential housing. Their population has increased dramatically in the last 100 years, and they are now extremely common in urban settings. It can be stated with a high degree of certainty that urbanization and agriculture have been beneficial for this species. The species was recorded during the site survey, and the project site may occasionally be used as nesting or foraging habitat, but project implementation is unlikely to have any adverse impacts because this species has a high degree of adaptability to human-altered habitats and human disturbance, especially in Southern California (Bloom *et. al.* 1993).

Cooper's Hawk  
*Accipiter cooperi*

County List  
CSC

Cooper's Hawks often forage in search of small birds over a variety of habitats. This urban-adapted species also occurs in oak and riparian woodlands and developed/residential areas. They are a common resident and migrant species in San Diego County. Although this species has apparently declined throughout much of California, there is no evidence for a breeding population decline in San Diego County. Cooper's forage for small birds within highly vegetated areas, and thus would not rely on habitat outside the riparian zone. The project would not



adversely affect the species' habitat (Willow Riparian Woodland), thus no impacts are anticipated.

Turkey Vulture  
*Cathartes aura*

County List

Turkey Vultures forage for carrion over Non-Native Grassland. They are common migrants and winter residents in San Diego County, and were a formerly more common breeding species. The site may rarely be used as foraging habitat for this species. Impacts to this species are not anticipated.

Barn Owl  
*Tyto alba*

County List

Barn Owls are a cosmopolitan species and are a widespread resident in San Diego County. On the coastal slope they occur in agricultural, residential, grassland, riparian, oak woodland, and chaparral habitats (Unitt 1984). There is no scientific or other evidence to suggest that Barn Owls are declining or sensitive in San Diego County. Although they may occasionally occur on the project site, project implementation is unlikely to adversely affect their status. No impacts to this species are anticipated.

**Although the following species were not recorded on-site, and are not considered likely to occur, their status is discussed because they are known to occur in the region:**

Least Bell's Vireo  
*Vireo belli pusillus*

CNDDDB / County List  
FE / SE

The Least Bell's Vireo is listed as endangered by both the state and federal governments. Available census data indicate that the Least Bell's Vireo population in Southern California increased from an estimated 300 pairs in 1986 to 1,346 pairs in 1996. Its breeding habitat is restricted to mature willow riparian woodland. Most frequently, it occupies extensive areas that combine an understory of dense young willows or mulefat with a canopy of tall willows. The most critical habitat structural component is a dense shrub layer 0.6-3.0 meters above ground. The vireo's decline is due to loss of riparian habitat combined with nest parasitism by the Brown-headed Cowbird, which lays its eggs in vireo nests thereby reducing the vireo's reproductive success.

Nesting adults are relatively tolerant of human interference at the nest and minor habitat modifications near the nest; nest abandonment due to these factors is low (Brown 1993).

Potential for this species to occur or breed within the project site is low due to the lack of suitable dense native understory. The nearest site occupied by this species is on the San Luis Rey

River in more suitable habitat. No Least Bell's Vireos were detected and none are considered likely to occur. Focused surveys for this species are not recommended.

### Southwestern Willow Flycatcher Discussion

The Southwestern Willow Flycatcher *Empidonax traillii extimus* is a small insectivorous bird that breeds in dense riparian habitats across the southwestern United States. Once locally common and widely distributed, the Southwestern Willow Flycatcher has suffered dramatic population declines during the 20th century, primarily due to hydrologic and habitat alteration of rivers and streams and brood parasitism by the Brown-headed Cowbird. It was listed as Federally Endangered in 1995, State Endangered in 1990.

Southwestern Willow Flycatchers measure about 5.75 inches (15 cm) in length, and weigh only about 0.4 ounces (12 g). Overall, it is roughly the size of a small sparrow. Both sexes look alike. The flycatcher's appearance is overall greenish or brownish gray above, with a white throat that contrasts with a pale olive breast. The belly is pale yellow. Two white wing bars are visible, but the eye ring is faint or absent. The upper mandible is dark, and the lower mandible light. It closely resembles the other races of Willow Flycatcher, and several other species of the *Empidonax* genus, particularly the closely-related Alder Flycatcher (*Empidonax alnorum*). The *Empidonax* flycatchers are renowned as one of the most difficult groups of birds to distinguish by sight alone.

Prior to being listed as an endangered species in 1995, the Southwestern Willow Flycatcher was seldom studied, and as a result there was a dearth of information on the bird's basic ecology, natural history, distribution, and status.

The Southwestern Willow Flycatcher is a neotropical migrant, which means it breeds in North America and spends the winter in Central America. Its breeding range includes Southern California (from the Santa Ynez River south), Arizona, New Mexico, extreme southern portions of Nevada and Utah, extreme southwest Colorado, and western Texas.

Almost all Southwestern Willow Flycatcher breeding habitats are within close proximity (less than 20 yards) of water or very saturated soil. This water may be in the form of large rivers, smaller streams, springs, or marshes. At some sites, surface water is present early in the nesting season, but gradually dries up as the season progresses. Ultimately, the breeding site must have a water table high enough to support riparian vegetation.

Southwestern Willow Flycatchers are communal breeders, meaning that most known breeding locations support a number of pairs. Solitary breeding pairs are rare. This pattern is likely the result of the species' philopatric nesting habits; they return each year to the same nesting locale. Dispersing young seem to also return to the natal breeding grounds. This behavior tends to slow the process of range expansion, even when suitable habitat is available.

In San Diego County, Southwestern Willow Flycatchers are rare, and primarily occur only along major riparian corridors or in areas of extensive riparian habitat adjacent to large reservoirs. The largest local breeding population is on the extreme upper San Luis Rey River, very close to Lake Henshaw. At this locale, they occupy Oak Riparian Woodland, unusual

behavior that is suspected to be a habitat “artifact” as the result of water management practices that have significantly altered vegetation communities over the last century (Bill Haas, Pers. Comm.).

Elsewhere in San Diego County, colonial nesting is also known from the Santa Margarita River (Camp Pendleton). There have been reports of pairs breeding in dense willow forests at the upper end of El Capitan Reservoir and Sweetwater Reservoir. Nesting pairs have also been documented in the Agua Tiba Wilderness (Phil Unitt, Pers. Comm.).

At the project site, the riparian vegetation lacks the dense lower vegetation cover and nearby open areas with running water that the species requires. No Southwestern Willow Flycatchers were detected and none are considered likely to occur. Focused surveys for this species are not recommended.

Arroyo Toad  
*Bufo microscaphus californicus*

CNDDDB / County List  
FE

The arroyo toad was listed as endangered by the U.S. Fish and Wildlife Service in December, 1994. Reasons for this species decline include habitat loss and predation by introduced bullfrogs. In 1994 there were only 22 known populations of this species. The arroyo toad is restricted to rivers that have shallow, gravelly pools adjacent to sandy terraces. Breeding occurs on large streams with persistent water from late March until mid-June. Eggs are deposited and larvae develop in shallow pools with minimal current and little or no emergent vegetation and with sand or pea gravel substrate overlain with flocculent silt. After metamorphosis (June or July), the juvenile toads remain on the bordering gravel bars until the pool no longer persists (3 to 8 weeks, depending on site and year). Juveniles and adults forage for insects on sandy stream terraces that have nearly complete closure of cottonwoods (*Populus* spp.), oaks (*Quercus* spp.), or willows (*Salix* spp.), and almost no grass and herbaceous cover at ground level. Adult toads excavate shallow burrows on the terraces where they shelter during the day when the surface is damp or during longer intervals in the dry season.

Examination of databases from the U.S. Fish and Wildlife Service and U.S. Geological Survey indicate that there are no known arroyo toad breeding locations within a kilometer of the project site. The nearest known locations of occurrence are on the San Luis Rey River, more than a kilometer north of the project site (Robert Fisher, USGS, Pers. Comm.).

A habitat assessment for this species was conducted at the project site. There are no habitat characteristics present which are considered to be necessary for arroyo toad activity (e.g., open sand and gravel channels with shallow pools bordered by open riparian vegetation). Due to lack of suitable habitat, no arroyo toads are considered likely to occur on the site. In order for arroyo toads to disperse, there must be a suitable “pathway” over which they can travel (B. Haas, pers. comm.). Between the San Luis Rey River and the project site, drainages (often used by arroyo toads for dispersal) are extremely steep and incised with dense vegetation. No suitable movement pathway between suitable habitat and the project site exists.

**No listed or sensitive species were detected on the project site, and none are considered likely to occur. No additional focused surveys should be required to investigate listed species' occurrence.**

### **Wildlife Movement Corridors**

A wildlife corridor can be defined as a linear landscape feature allowing animal movement between two patches of habitat. Connections between extensive areas of open space are integral to maintain regional diversity and population viability. In the absence of corridors, habitats become isolated islands surrounded by development. Fragmented habitats support significantly lower numbers of species and increase the likelihood of local extinction for select species when restricted to small isolated areas of habitat. Areas that serve as wildlife movement corridors are considered biologically sensitive.

Wildlife corridors can be defined in two categories: regional wildlife corridors and local corridors. Regional corridors link large sections of undeveloped land and serve to maintain genetic diversity among wide-ranging populations. Local corridors permit movement between smaller patches of habitat. These linkages effectively allow a series of small, connected patches to function as a larger block of habitat and perhaps result in the occurrence of higher species diversity or numbers of individuals than would otherwise occur in isolation. Target species for wildlife corridor assessment typically include species such as bobcat, mountain lion, and mule deer.

The only feature on the project site that would function as a very minor local wildlife corridor is the east/west drainage that transects the southeast corner of the project site. This area will be placed in a buffered Biological Open Space Easement that will preserve the minor local wildlife movement functions of the drainage. Although this minor drainage ultimately feeds into the San Luis Rey River (a major regional linkage and wildlife corridor), it reaches its upper terminus approximately 200 yards east of the project site, in an area of residential development and degraded habitat (Figure 6). Because of the highly limited resources east of the project site, it is unlikely that the protected drainage on-site will serve as any significant linkage or passageway for wildlife. In addition, less than a kilometer downstream of the project site, the drainage course passes through an extensive agricultural area where it has been channelized and all vegetation removed (Figure 7). This significantly limits the ability of the drainage to act as a wildlife movement corridor. Lastly, no sensitive species occur in the wetland on-site or upstream of the site. All of these factors considered, the preserved wetland on-site has little value for wildlife movement. A biological buffer of 50 feet on the eastern portion of the site (where the wetland is narrow and deeply incised) will be adequate to protect wetland resources. As the wetland widens towards the southwest corner of the site, the biological buffer will be expanded to 100 feet (See Vegetation Map).

## PERMITTING

During the Wetland Survey of the project site special attention was given to examining the three north-south drainage features that transect the southern portion of the project site. As noted in the Wetland Survey, these areas were assessed for the presence of hydrophytic vegetation, hydric soils, hydrology, and features that would indicate the presence of Resource Protection Ordinance (RPO) wetlands, California Department of Fish and Game (CDF&G) wetlands, U.S. Army Corps of Engineers (USACE) wetlands or Waters of the United States. Any of these indicators could result in the need to obtain applicable permits from the CDF&G (Streambed Alteration Agreement) or USACE (Clean Water Act Section 404 compliance), should a wetland be impacted by the proposed project. No wetland or Waters of the U.S. indicators were found in these drainages.

Because no sensitive species, habitats, wetland areas or Waters of the United States will be impacted by project implementation, no additional local, state, or federal permit requirements are anticipated.

## SIGNIFICANCE CRITERIA

Direct impacts occur when biological resources are altered or destroyed during the course of, or as a result of, project implementation. Examples of such impacts include removal or grading of vegetation, filling wetland habitats, or severing or physically restricting the width of wildlife corridors. Other direct impacts may include loss of foraging or nesting habitat and loss of individual species as a result of habitat clearing. Indirect impacts may include elevated levels of noise or lighting, change in surface water hydrology within a floodplain, and increased erosion or sedimentation. These types of indirect impacts can affect vegetation communities or their potential use by sensitive species. Permanent impacts may result in irreversible damage to biological resources. Temporary impacts are interim changes in the local environment due to construction and would not extend beyond project-associated construction, including revegetation of temporarily disturbed areas adjacent to native habitats.

CEQA Guidelines define “significant effect on the environment” as a “substantial, or potentially substantial adverse change in the environment.” The CEQA Guidelines further indicate that there may be a significant effect on biological resources if the project will:

- A. Substantially affect an endangered, rare or threatened species of animal or plant or the habitat of the species.
- B. Interfere substantially with the movement of any resident or migratory fish or wildlife species to the extent that it adversely affects the population dynamics of the species.
- C. Substantially diminish habitat for fish, wildlife, or plants.

## PROJECT IMPACTS

### Direct Impacts

Direct impacts from the proposed project as currently designed will result in the loss of 0.48 acres of Southern Mixed Chaparral. An additional 0.13 acres of Southern Mixed Chaparral, 1.60 acres of Southern Willow-Cottonwood Riparian Forest and 1.37 acres of Coast Live Oak Woodland will be preserved on-site, and thus be protected from direct impacts.

A summary of the proposed impacts to plant communities and acreage conserved as biological open space on-site is provided in Table 1. This includes impacts associated with road grading, house pads, cut and fill slopes, and the 100 foot fire buffer required by the County of San Diego.

**Table 1. Existing, impacted, and preserved habitat on the project site (gross acres)**

PLANT COMMUNITY	ACREAGE ON-SITE	IMPACTED ACREAGE ON-SITE	IMPACTED OFF-SITE	ACREAGE PRESERVED ON-SITE	MITIGATION REQUIRED (Ratio)
ORCHARDS AND VINEYARDS	26.42	N / A	N / A	N / A	0
SOUTHERN COTTONWOOD-WILLOW RIPARIAN FOREST	1.60	0	0	1.60	0
SOUTHERN MIXED CHAPARRAL	0.61	0.48	0	0.13	0.24 (0.5:1)
COAST LIVE OAK WOODLAND	1.37	0	0	1.37	0
<b>TOTAL</b>	<b>30.0</b>	<b>0.48</b>	<b>0</b>	<b>3.10</b>	<b>0.24</b>

The direct impacts to 0.48 acres of Southern Mixed Chaparral is considered significant and requires mitigation to reduce impacts to a level below significant. Current County policy requires mitigation for the loss of this habitat type to be at a ratio of 0.5:1.

No off-site impacts to sensitive habitats will result from this project. Building pads have been re-located so that they are a minimum of 100 feet from the property boundaries. According to the project engineer, any required off-site road improvements can be made without impacting sensitive habitat, either directly or as a result of fire clearing requirements.

### Indirect Impacts

There is the potential for indirect impacts to occur as a result of implementation of the proposed project. The areas where indirect impacts have the potential to occur could extend from

the development edge into conserved habitat due to such activities as excessive landscape irrigation, vegetation trampling outside developed areas, and introduction of non-native species (e.g., argentine ants, cats, non-native invasive plant species). These indirect impacts are referred to as “edge effects.” There is the potential for indirect impacts on animals as a result of an increase in noise, dust, and light during construction activities and from vehicle use. There is also the potential for the introduction of “urban” runoff into major drainages. These indirect impacts are considered unavoidable due to the size of the project, land uses on-site, and existing surrounding land uses.

Indirect impacts from edge effects are considered adverse, but not significant, because the site is mostly disturbed and existing edge effects are already dominating the site. The potential for increased sediment load to the drainages associated with construction is considered adverse, but can be avoided by use of Best Management Practices (BMPs) to minimize sedimentation.

### **Cumulative Impacts**

Cumulative impacts consider the potential regional effects of a project and how a project may affect an ecosystem or one of its members beyond the project limits and on a regional scale.

If implemented, the proposed project would not result in additions to the cumulative loss of sensitive habitats or species within San Diego County.

### **MITIGATION AND RECOMMENDATIONS**

The following mitigation measures are recommended:

1. All of the Southern Cottonwood-Willow Riparian forest (1.60 acres) and Coast Live Oak Woodland (1.37 acres) will be placed into a buffered Biological Open Space Easement, thus avoiding impacts to these sensitive habitats. Fencing and signage are appropriate to delineate the open space easement.
2. Impacts to 0.48 acres of Southern Mixed Chaparral will be accomplished by the purchase of appropriate mitigation credits within a County approved mitigation bank in the region. The County requires impacts to Southern Mixed Chaparral to be mitigated at a 0.5:1 ratio. At this ratio, 0.24 acres of appropriate habitat will be conserved within a County approved mitigation bank. A determination of where mitigation will occur will be made prior to final project approval.
3. Implementation of Best Management Practices during construction, such as erosion and sediment control and the diversion of runoff water to detention basins, will reduce impacts from temporary construction activities to a level less than significant.

**The mitigation as proposed is deemed to be adequate to reduce the overall impacts of the proposed project to a level below significant.**

The following recommendation is made regarding conditions of the Biological Open Space Easement:

1. Because the agricultural area in the extreme southeast corner of the project site contains a new storage structure and farm equipment mobilization area, the easement should be conditioned to allow for continued agriculture (as is currently practiced - not expanded) until such time as agriculture is abandoned. At that time the easement area will revert to the same conditions that typically apply to biological open space easements.



## WETLANDS SURVEY

### Introduction

The County of San Diego requires that wetland surveys be completed using the wetlands definition within the County's Resource Protection Ordinance (RPO). This definition includes:

All lands which are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or where the land is covered by water. All lands having one or more of the following attributes are "wetlands":

- a. At least periodically, the land supports predominantly hydrophytes (plants whose habitat is water or very wet places);
- b. The substratum is predominantly undrained hydric soil; or
- c. The substratum is nonsoil and is saturated with water or covered by water at some time during the growing season each year.

Other pertinent definitions from the RPO include:

**Mature Riparian Woodland** - A grouping of sycamores, cottonwoods and/or oak trees having substantial biological value, where at least ten of the trees have a diameter of six inches or greater.

**Riparian Habitat** - An environment associated with the banks and other land adjacent to freshwater bodies, rivers, streams, creeks, estuaries, and surface-emergent aquifers (such as springs, seeps, and oases). Riparian habitat is characterized by plant and animal communities which require high soil moisture conditions maintained by transported freshwater in excess of that otherwise available through local precipitation.

It should also be noted that the County's definition of wetlands varies from the U.S. Army Corps of Engineers' (USACE) definition. The USACE frequently requires that formal or informal wetland delineations be conducted under guidelines set forth in the 1987 Corps of Engineers Wetland Delineation Manual. The USACE defines a wetland as "an area... inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Typically, USACE wetlands are characterized by the presence of hydrophytic vegetation, hydric soils, and wetland hydrology.

In addition to regulating jurisdictional wetlands, Section 404 of the Clean Water Act (33 U.S.C. 1344) requires authorization for discharges of dredged or fill material into Waters of the United States. For non-tidal Waters of the U.S. the extent of jurisdiction is defined as the Ordinary High Water Mark, which is defined as: "the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural lines

impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation or presence of litter and debris.”

Thus, an area determined to be a non-wetland may still be under USACE jurisdiction if certain criteria are met. To aid in identifying characteristics of Waters of the U.S., the USACE has prepared guidelines (USACE 2001) and a matrix detailing potential Waters of the U.S. based on apparent flow regimes, geomorphic features, and surface flow indicators. In addition, determination that a wetland or water body is a Waters of the United States also requires that the area in question is subject to interstate commerce. These criteria were considered as they apply to the project site.

#### California Department of Fish and Game Wetlands

Typically, the extent of CDFG wetlands is determined by the limits of riparian vegetation as it extends from a stream, creek, river, pond, lake, or other water feature. Often, CDFG and RPO wetlands have identical boundaries.

### METHODS

The wetland survey was conducted during the site visit on 26 August 2004. Survey methods were based on the County wetland definition and additionally generally followed the protocol as set forth by the 1987 Army Corps of Engineers Wetland Delineation Manual (Wetland Training Institute 1995).

In addition, wetland/vegetation mapping on-site was aided by the use of aerial and satellite photographs. The USGS 7.5 minute topographical map for the area was also reviewed.

### RESULTS

The only County of San Diego or other jurisdictional wetland that was identified during the survey of the project site was the intermittent blue line stream that traverses the project site at its southeastern corner. This drainage originates east of the project site and flows southwest then northwest until it joins with the San Luis Rey River two kilometers to the north of the site.

On the project site, the drainage feature contains hydrophytic vegetation, and water was flowing at the time of the survey (hydrology). In places, there are signs of bed and bank formation. The soil within the wetland is categorized in Hydrologic group “B” (Bowman 1973). Categories range from “A” which has the lowest runoff potential, to “D” with the highest potential. The soil in the wetlands had high organic content in sandy soil as a hydric soil indicator. Additional indicators of hydric soils such as vertical streaking, mottling, and sulfidic odor were evaluated and noted during the survey. The extent of wetland is shown as Southern Willow-Cottonwood Riparian Forest on the project vegetation map.

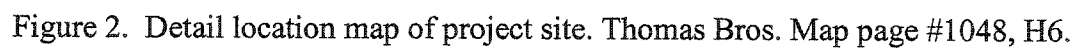
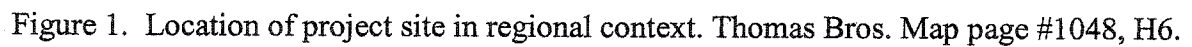
## CONCLUSIONS

The project site contains a wetland as defined by the County RPO and other jurisdictional agencies. However, all wetland areas will be protected in a dedicated Biological Open Space Easement on the site. Thus, the proposed project will have no impacts on wetland resources.

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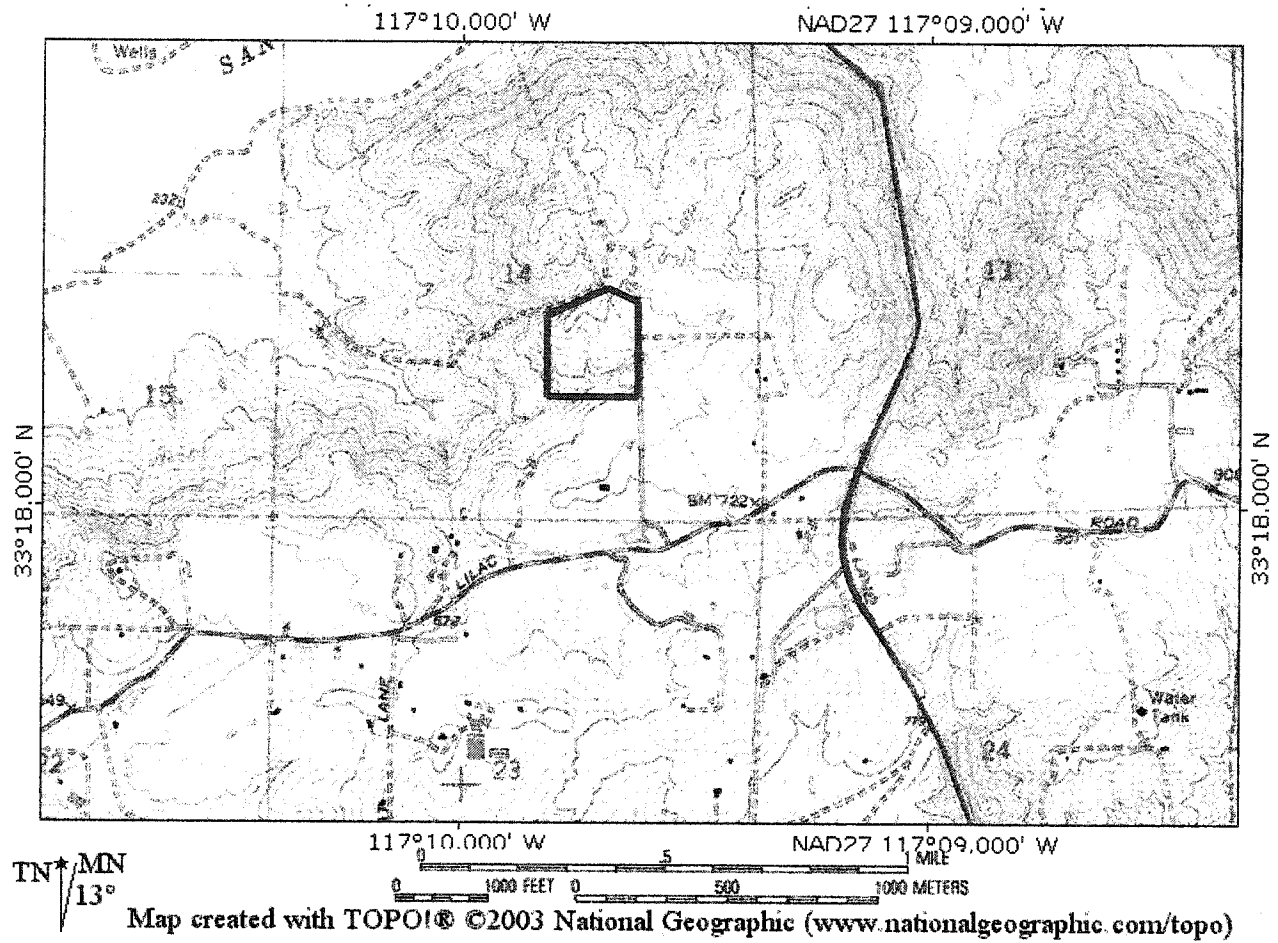


Figure 3. Topographical map showing project site location. Approximate project site boundaries are outlined in red. Taken from USGS Bonsall 7.5 minute series quadrangle.

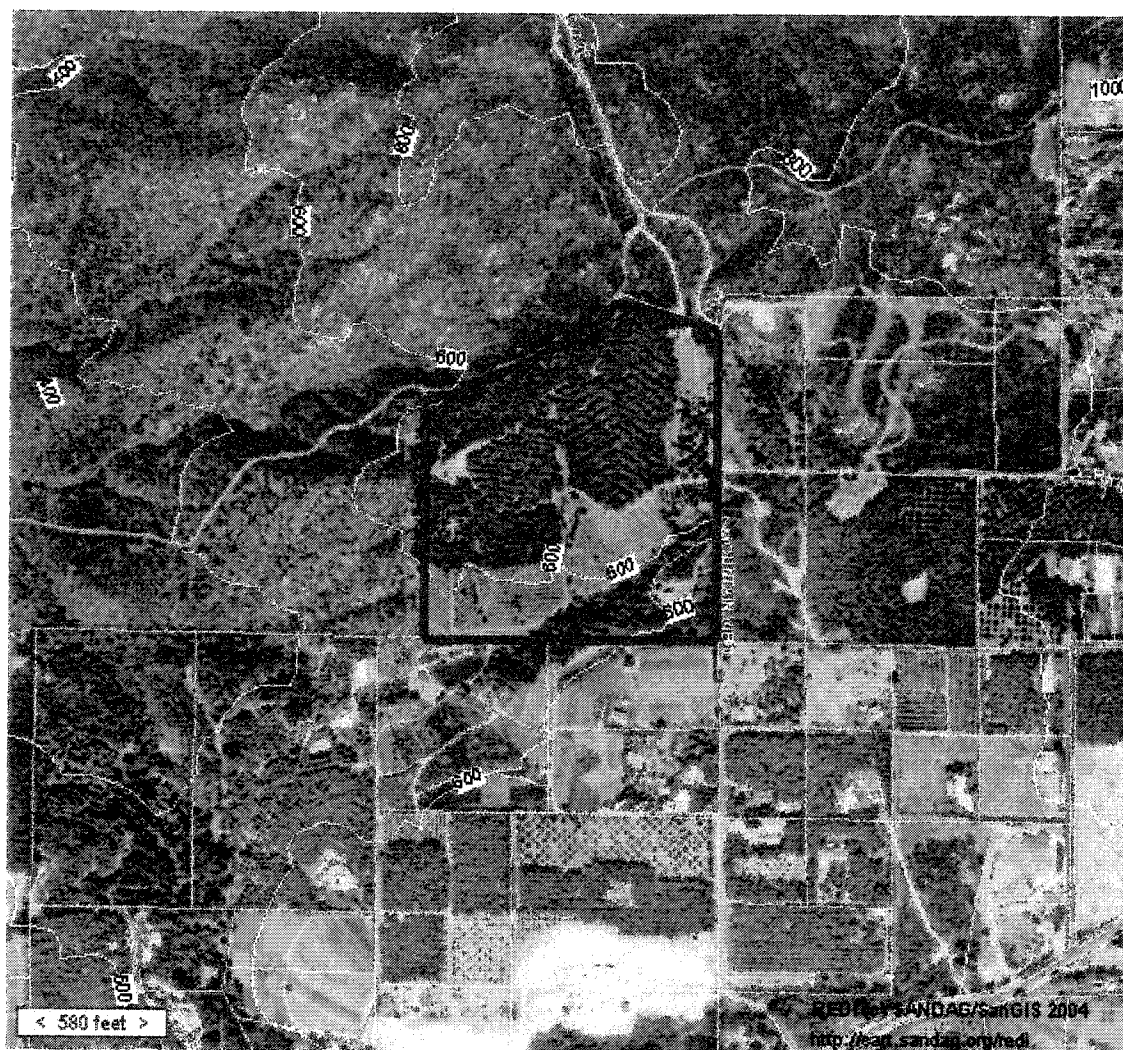


Figure 4. Satellite photograph of project site (photograph by SANDAG/SanGIS 2004), showing parcel boundaries for project site (outlined in red, in center) and adjacent properties in yellow. Top of photo is true north.

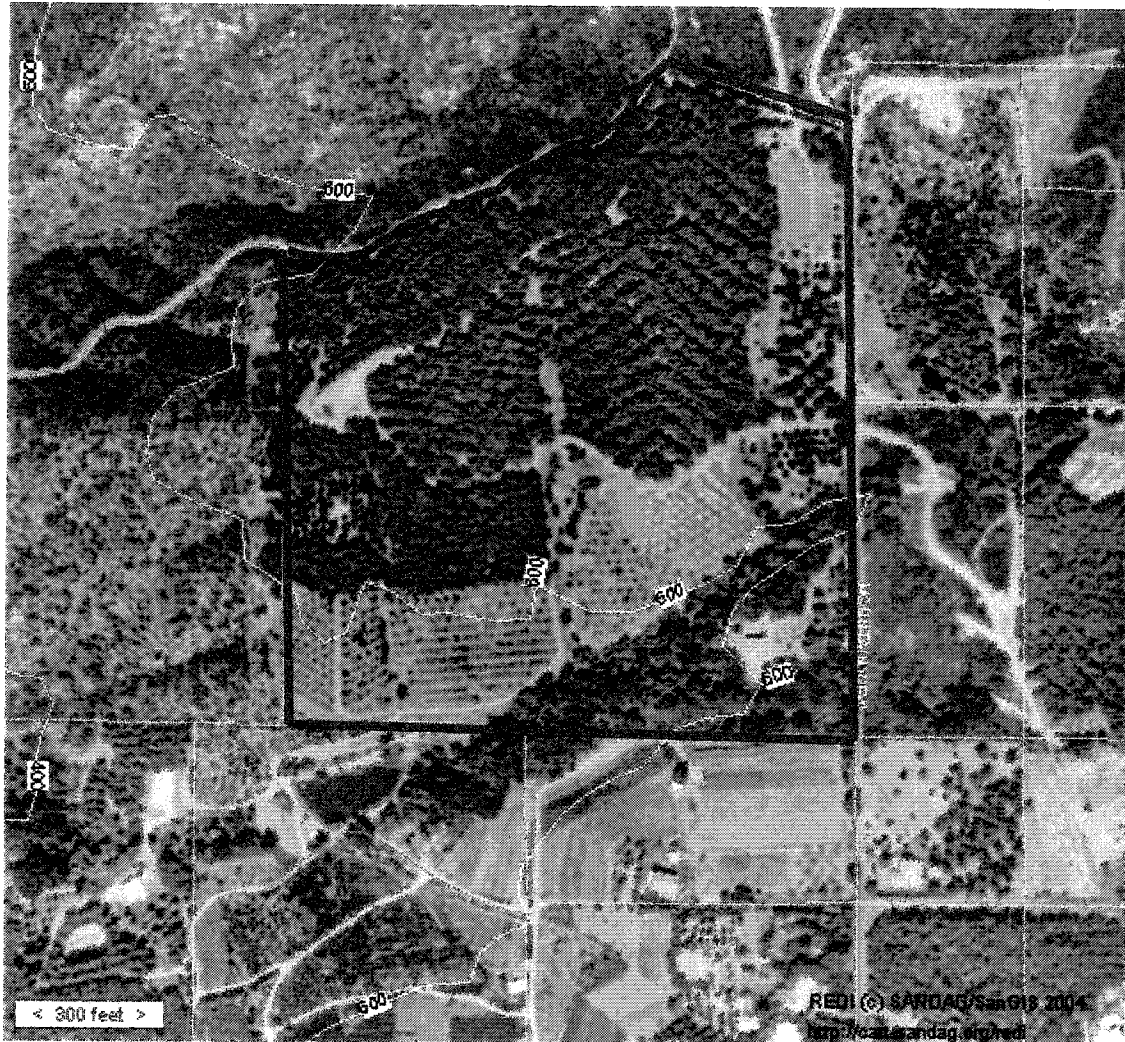


Figure 5. Satellite photograph of project site (photograph by SANDAG/SanGIS 2004), showing parcel boundaries for project site (outlined in red, in center) and adjacent properties in yellow. Top of photo is true north.





Figure 6. Color aerial photograph showing the course of the blue line stream (yellow dots) that flows through the project site. The project boundaries are shown in red.

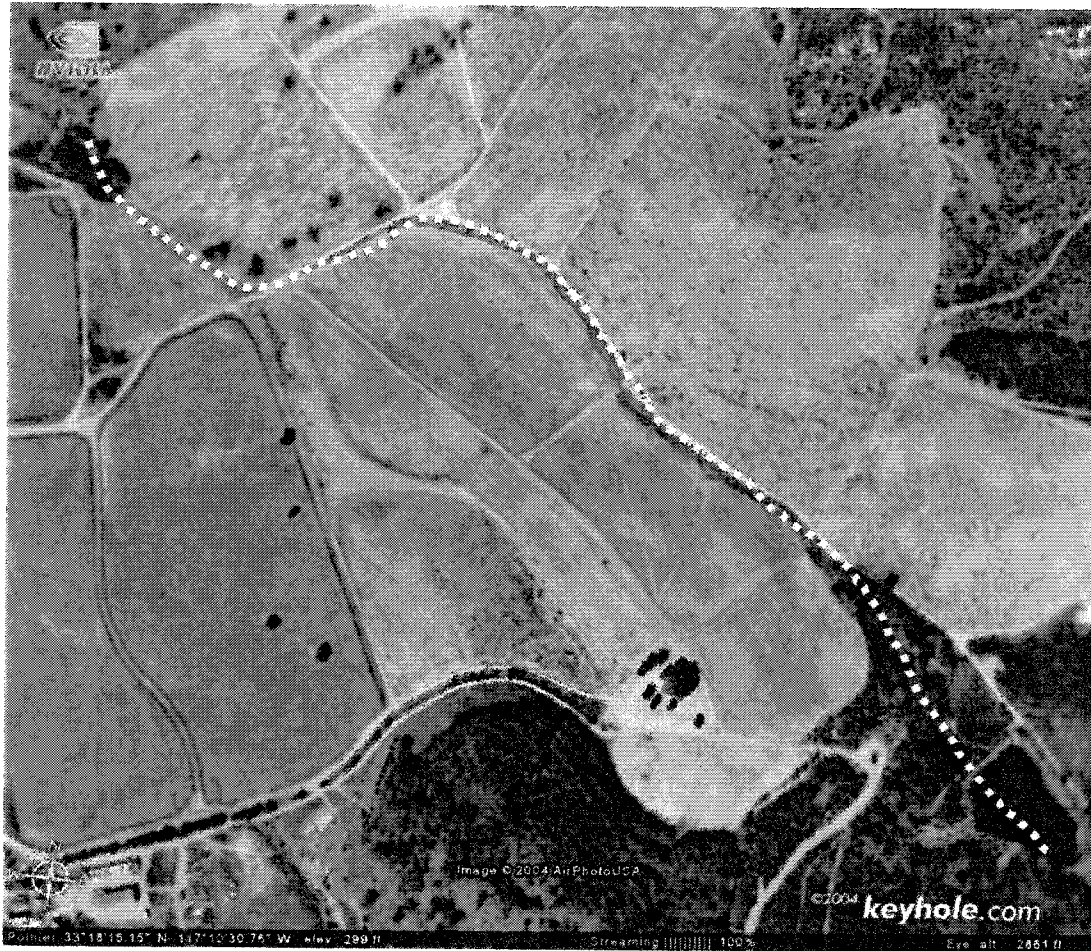


Figure 7. Close-up color aerial photograph of the degraded stream course between the project site and the San Luis Rey River. Stream course is shown with yellow dots.

**APPENDIX A****PLANT SPECIES OBSERVED ON THE PROJECT SITE**

<u>Family</u>	<u>Scientific Name</u>	<u>Common Name</u>
Dicotyledoneae		
Aizoaceae - Carpet-Weed Family		
	<i>Carpobrotus edulis</i>	Hottentot-fig
Anacardiaceae - Sumac Family		
	<i>Malosma laurina</i>	Laurel Sumac
	<i>Toxicodendron diversilobum</i>	Poison Oak
Apiaceae (Umbelliferae) - Carrot Family		
	<i>Foeniculum vulgare</i>	Sweet Fennel
Arecaceae (Palmae) - Palm Family		
	<i>Washingtonia</i> sp.	Fan Palm
Asteraceae (Compositae) - Sunflower Family		
	<i>Artemisia californica</i>	California Sagebrush
	<i>Baccharis salicifolia</i>	Mule Fat
	<i>Centaurea melitensis</i>	Tocalote
	<i>Cirsium</i> sp.	Thistle
	<i>Conyza bonariensis</i>	Conyza
	<i>Conyza canadensis</i>	Horseweed

<i>Sonchus asper</i>	Prickly Sow Thistle
Brassicaceae (Cruciferae) - Mustard Family	
<i>Brassica sp.</i>	Mustard
Cactaceae - Cactus Family	
<i>Opuntia sp.</i>	Prickly Pear
Caprifoliaceae - Honeysuckle Family	
<i>Sambucus mexicana</i>	Elderberry
Chenopodiaceae - Goosefoot Family	
<i>Salsola tragus</i>	Russian Thistle
Cuscutaceae - Dodder Family	
<i>Cuscuta sp.</i>	Witch's Hair, Dodder
Euphorbiaceae -Spurge Family	
<i>Ricinus communis</i>	Castor Bean
Fagaceae - Oak Family	
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast Live Oak
Geraniaceae - Geranium Family	
<i>Erodium cicutarium</i>	Red-stem Filaree
Grossulariaceae - Gooseberry Family	
<i>Ribes indecorum</i>	White-flowered Currant
Oleaceae - Olive Family	
<i>Olea europea</i>	Olive
Polygonaceae - Buckwheat Family	
<i>Eriogonum fasciculatum</i> ssp. <i>fasciculatum</i>	California Buckwheat

## Rosaceae - Rose Family

*Heteromeles arbutifolia*

Toyon

*Pyracantha* sp.

Fire Thorn

## Salicaceae - Willow Family

*Populus fremontii*

Fremont Cottonwood

*Salix gooddingii* var. *gooddingii*

Black Willow

*Salix lasiolepis*

Arroyo Willow

## Solanaceae - Nightshade Family

*Datura wrightii*

Jimsonweed

*Nicotiana glauca*

Tree Tobacco

*Solanum* sp.

Nightshade

## Vitaceae - Grape Family

*Vitis girdiana*

Wild Grape

## Monocotyledoneae

## Poaceae (Gramineae) - Grass Family

*Avena* sp.

Wild Oats

*Avena barbata*

Slender Wild Oat

*Bromus carinatus*

California Brome

**APPENDIX B****WILDLIFE SPECIES OBSERVED OR DETECTED  
ON THE PROJECT SITE****BIRDS**

Red-shouldered Hawk	<i>Buteo lineatus</i>
Anna's Hummingbird	<i>Calypte anna</i>
Nuttall's Woodpecker	<i>Picoides nuttallii</i>
Western Scrub-Jay	<i>Aphelocoma californica</i>
Common Raven	<i>Corvus corax</i>
Bushtit	<i>Psaltiriparus minimus</i>
California Towhee	<i>Pipilo crissalis</i>
Lesser Goldfinch	<i>Carduelis psaltria</i>
House Finch	<i>Carpodacus mexicanus</i>

**MAMMALS**

California Ground Squirrel <i>Spermophilus beecheyi</i>	Observed
Southern Pocket Gopher <i>Thomomys bottae</i>	Burrows

**AMPHIBIANS AND REPTILES**

Western Fence Lizard  
*Sceloporus occidentalis*

Side-blotched Lizard  
*Uta stansburiana*

**APPENDIX C**

**PHOTOGRAPHS OF THE PROJECT SITE**

All photographs taken 2004 by W.T. Everett





Photograph 1. View from the southwest corner of the project site looking towards the east.



Photograph 2. View looking from the south-central portion of the project site towards the southwest.



Photograph 3. Disturbed Habitat in the foreground and Southern Cottonwood-Willow Riparian Forest on the left.



Photograph 4. The mature Southern Cottonwood-Willow Riparian Forest.

**APPENDIX D****COUNTY LIST OF SENSITIVE SPECIES WITH POTENTIAL TO OCCUR  
ON THE PROJECT SITE****Legend****Status**

- 1 = Federally Endangered  
 2 = Federally Threatened  
 3 = State Endangered  
 4 = State Threatened  
 5 = State Rare  
 6 = MSCP Narrow Endemic  
 7 = Not Listed  
 Ext = Extirpated

**Potential to Occur On-site**

- L = Low  
 M = Moderate  
 H = High  
 U = Unknown (Sufficient data are not available on the status, distribution, abundance, or natural history of the species to make a reliable determination of the probability of occurring on-site.)

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Observed On-Site (Y or N)</b>	<b>Potential to Occur On-site</b>	<b>Habitat Preferences</b>
Rainbow manzanita	<i>Arctostaphylos rainbowensis</i>	7	N	L	Mixed Chaparral
Orcutt's brodiaea	<i>Brodiaea orcuttii</i>	7	N	L	Grassland, Riparian, Oak Woodland, Chamise Chaparral, Vernal Pools

Prostrate spineflower	<i>Chorizanthe procumbens</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Chamise Chaparral
Palmer's grappling hook	<i>Harpagonella palmeri</i>	7	N	L	Coastal Sage Scrub, Grassland, Chamise Chaparral
Southwestern spiny rush	<i>Juncus acutus leopoldii</i>	7	N	L	Riparian, Oak Woodland, Freshwater Marsh,
Chaparral beargrass	<i>Nolina cismontana</i>	7	N	L	Mixed Chaparral, Chamise Chaparral
Cooper's rein orchid	<i>Piperia cooperi</i>	7	N	L	Grassland, Chamise Chaparral
California adder's tongue fern	<i>Ophioglossum californicum</i>	7	N	L	Mixed Chaparral, Grassland, Vernal Pools
Narrow-petaled rein orchid	<i>Piperia leptopetala</i>	7	N	L	Cismontane Woodland, Coniferous Forest
Engelmann oak	<i>Quercus engelmannii</i>	7	N	L	Riparian, Oak Woodland
Monarch butterfly	<i>Danaus plexippus</i>	7	N	L	Grassland, Oak Woodland, Montane Meadow
Arroyo toad	<i>Bufo microscaphus californicus</i>	1, 6	N	L	Coastal Sage Scrub, Mixed Chaparral, Grassland, Riparian, Oak Woodland, Chamise Chaparral, Montane Meadow
San Diego banded gecko	<i>Coleonyx variegates blainvillei</i>	7	N	L	Riparian, Freshwater Marsh, Montane Meadow, Lakes and Bays
San Diego horned lizard	<i>Phrynosoma coronatum blainvillei</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Grassland, Riparian, Chamise Chaparral, Mixed Conifer
Orange-throated whiptail	<i>Cnemidophorus hyperythrus</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Grassland, Riparian, Chamise Chaparral

Coastal western whiptail	<i>Cnemidophorus tigris multiscutatis</i>	7	N	L	Mixed Chaparral, Riparian, Oak Woodland, Chamise Chaparral
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	7	N	L	Coastal Sage Scrub, Grassland, Riparian, Coastal or Desert Dune
Coastal rosy boa	<i>Charina trivirgata roseoffusca</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Oak Woodland, Chamise Chaparral
San Diego ringneck snake	<i>Diadophis punctatus similis</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Riparian, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest
Coast patch-nosed snake	<i>Salvadora hexalepis virgultea</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Chamise Chaparral, Freshwater Marsh
Northern red diamond rattlesnake	<i>Crotalus ruber ruber</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral Chamise Chaparral, Pinon Juniper, Desert Scrub
California red-legged frog	<i>Rana aurora draytoni</i>	2, 6	N	L	Riparian, Freshwater Marsh, Montane Meadow, Lakes and Bays
South Coast garter snake	<i>Thamnophis sirtalis ssp. Novum</i>	7	N	L	Riparian, Freshwater Marsh
Two stripe garter snake	<i>Thamnophis hammondi</i>	7	N	L	Riparian, Freshwater Marsh

Yuma myotis	<i>Myotis yumanensis</i>	7	N	U	Coastal Sage Scrub, Mixed Chaparral, Grassland, Riparian, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest, Pinon-Juniper, Freshwater Marsh, Salt or Alkali Marsh, Vernal Pools, Montane Meadow, Lakes and Bays
Small-footed myotis	<i>Myotis ciliolabrum</i>	7	N	L	Mixed Chaparral, Riparian, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest, Pinon-Juniper, Desert Wash, Montane Meadow
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	7	N	L	Mixed Chaparral, Grassland, Riparian, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest, Pinon-Juniper, Desert Scrub, Desert Wash, Montane Meadow
Pallid bat	<i>Antrozous pallidus</i>	7	N	U	Coastal Sage Scrub, Mixed Chaparral, Grassland, Riparian, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest, Pinon-Juniper, Desert Scrub, Desert Wash, Montane Meadow
Western red bat	<i>Lasiurus blossevillii</i>	7	N	U	Riparian, Oak Woodland, Mixed Conifer, Closed Cone Forest, Montane Meadow

Pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>	7	N	U	Coastal Sage Scrub, Mixed Chaparral, Grassland, Riparian, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest, Pinon-Juniper, Freshwater Marsh, Desert Scrub, Desert Wash, Salt or Alkali Marsh, Vernal Pools, Montane Meadow, Lakes and Bays
Big free-tailed bat	<i>Nyctinomops macrotis</i>	7	N	U	Coastal Sage Scrub, Mixed Chaparral, Grassland, Riparian, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest, Pinon-Juniper, Freshwater Marsh, Desert Scrub, Desert Wash, Salt or Alkali Marsh, Vernal Pools, Montane Meadow, Lakes and Bays
Greater western mastiff bat	<i>Eumops perotis californicus</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Grassland, Riparian, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest, Pinon-Juniper, Freshwater Marsh, Desert Scrub, Desert Wash, Salt or Alkali Marsh, Vernal Pools, Montane Meadow, Lakes and Bays

San Diego black-tailed jackrabbit	<i>Lepus californicus bennettii</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Grassland, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest
Dulzura California pocket mouse	<i>Chaetodipus californicus femoralis</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Grassland, Oak Woodland, Chamise Chaparral, Mixed Conifer
Southern grasshopper mouse	<i>Onychomys torridus Ramona</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Grassland, Chamise
Stephen's kangaroo rat	<i>Dipodomys stephensi</i>	1, 4	N	L	Coastal Sage Scrub, Grassland
San Diego desert woodrat	<i>Neotoma lepida intermedia</i>	7	N	L	Coastal Sage Scrub, Riparian, Oak Woodland, Chamise Chaparral
Southern mule deer	<i>Odocoileus hemionus</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Grassland, Riparian, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest, Pinon-Juniper, Desert Scrub, Desert Wash, Montane Meadow
American badger	<i>Taxidea taxus</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Grassland, Oak Woodland, Chamise Chaparral, Mixed Conifer, Pinon-Juniper, Desert Scrub, Desert Wash, Montane Meadow
Ringtail	<i>Bassariscus astutus</i>	7	N	L	Mixed Chaparral, Chamise Chaparral



Mountain lion	<i>Felis concolor</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Riparian, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest, Pinon-Juniper, Desert Scrub, Desert Wash, Montane Meadow
Great blue heron	<i>Ardea herodias</i>	7	N	L	Grassland, Freshwater Marsh, Lakes and Bays
Red-shouldered hawk	<i>Buteo lineatus</i>	7	Y	H	Riparian, Oak Woodland
Black-shouldered kite	<i>Elanus caeruleus</i>	7	N	L	Grassland, Riparian
Cooper's hawk	<i>Accipiter cooperi</i>	7	N	M	Grassland, Riparian, Oak Woodland
Golden eagle	<i>Aquila chrysaetos</i>	6	N	L	Coastal Sage Scrub, Mixed Chaparral, Grassland, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest, Pinon-Juniper
Turkey vulture	<i>Cathartes aura</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Grassland, Riparian, Oak Woodland, Chamise Chaparral, Mixed Conifer, Closed Cone Forest
Sharp-shinned hawk	<i>Accipiter striatus</i>	7	N	L	Coastal Sage Scrub, Oak Woodland, Mixed Conifer
Common barn-owl	<i>Tyto alba</i>	7	N	M	Riparian, Oak Woodland
Loggerhead shrike	<i>Lanius ludovicianus</i>	7	N	L	Coastal Sage Scrub, Grassland, Riparian, Oak Woodland, Desert Scrub, Desert Wash
Yellow-breasted chat	<i>Ictera virens</i>	6,7	N	L	Riparian

California Gnatcatcher	<i>Polioptila californica californica</i>	2	N	L	Coastal Sage Scrub
Western bluebird	<i>Sialia mexicana</i>	7	Y	L	Riparian, Oak Woodland
Horned lark	<i>Eremophila alpestris actis</i>	7	N	L	Grassland, Montane Meadow
Southwestern willow flycatcher	<i>Empidonax trailii extimus</i>	1	N	L	Riparian
Rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	7	N	L	Coastal Sage Scrub, Chamise Chaparral
Bell's sage sparrow	<i>Amphispiza belli belli</i>	7	N	L	Coastal Sage Scrub, Mixed Chaparral, Chamise Chaparral
Grasshopper sparrow	<i>Ammodramus savannarum</i>	7	N	L	Grassland

## APPENDIX E

### PREPARER QUALIFICATIONS

**William T. Everett** is a research, consulting, and conservation biologist with more than 30 years experience in the San Diego environment and around the world. He has logged more than 12,000 hours of field work, all detailed with field notes. In the 1970's Bill apprenticed in the study of chaparral ecology under Frank Gander, the retired but renown premier California botanist of the 1930s and 40s. Although his specialty is ornithology, Bill has a long-standing interest in all endangered species management and conservation issues. As President then Conservation Chairman of the San Diego Chapter of the Audubon Society in the late 1970s, he gained a keen understanding of the conservation challenges facing a growing Southern California. He subsequently became one of the first Biological Consultants certified by the County of San Diego in the 1980s.

Bill Everett has published numerous scientific articles and conducted research in Southern California, Alaska, Baja California, South America, and throughout the tropical Pacific Ocean. In 1977, in recognition of his accomplishments, he was appointed as a Research Associate of the Department of Birds and Mammals of the San Diego Natural History Museum, a position he holds to this day. In 1990 he was elected as a Research Fellow of the Zoological Society of San Diego, and in 1988 was appointed as the Senior Conservation Biologist of the Western Foundation of Vertebrate Zoology. The Royal Geographic Society of London elected Bill as a Fellow in 1996, following his election as a Fellow of the Explorers Club in 1990.

Hired as a biologist for the U.S. Fish and Wildlife Service in 1977, Bill conducted research on endangered Peregrine Falcons in Northern California at a time when their continued existence was questionable. His interest in threatened species led to publication by the Audubon Society in 1979 of his paper entitled "Threatened, Declining and Sensitive Bird Species in San Diego County" (Sketches 36:1-2). This paper contained the first published account of the decline of the California Gnatcatcher.

Beyond the Southern California area, Bill has prepared the seabird impacts sections for the Draft and Final Environmental Impact Statements for Hawaii-based Pelagic Fisheries of the Western Tropical Pacific Ocean (2001), received a National Science Foundation major grant to lead an International Biocomplexity Survey and Expedition to Isla Guadalupe, Baja California, Mexico (2000), led the effort to save North America's most endangered bird species, the San Clemente Loggerhead Shrike (1991-1997), and currently heads up efforts to restore bird populations on Wake Atoll and Christmas Island in the central Pacific.

Bill holds a U.S. Fish and Wildlife Master Bird Banding Permit (#22378) with Endangered Species Authorization, and California Gnatcatcher Survey Authorization Permit # PRT-788036. He received his Masters Degree from the University of San Diego in 1991, and participated in a Post-Graduate Program at Harvard University in 1997.

Bill has served as a member of the Conservation and Research Committee of the Zoological Society of San Diego since the committee was first established. In 1990, he founded the Endangered Species Recovery Council ([www.esrc.org](http://www.esrc.org)), an international organization of scientists and conservationists dedicated to finding solutions to the problem of species extinctions. He continues as President of the organization.

In May 2002 Bill was honored in New York as a first recipient of the Explorers Club "Champions of Wildlife" award.

# NOTES

# VEGETATION MAP

WITH PROPOSED BIOLOGICAL OPEN SPACE EASEMENTS

HUKARI PROJECT

TPM 20830

APN 125-133-01

*William T. Everett* 25 July 1995

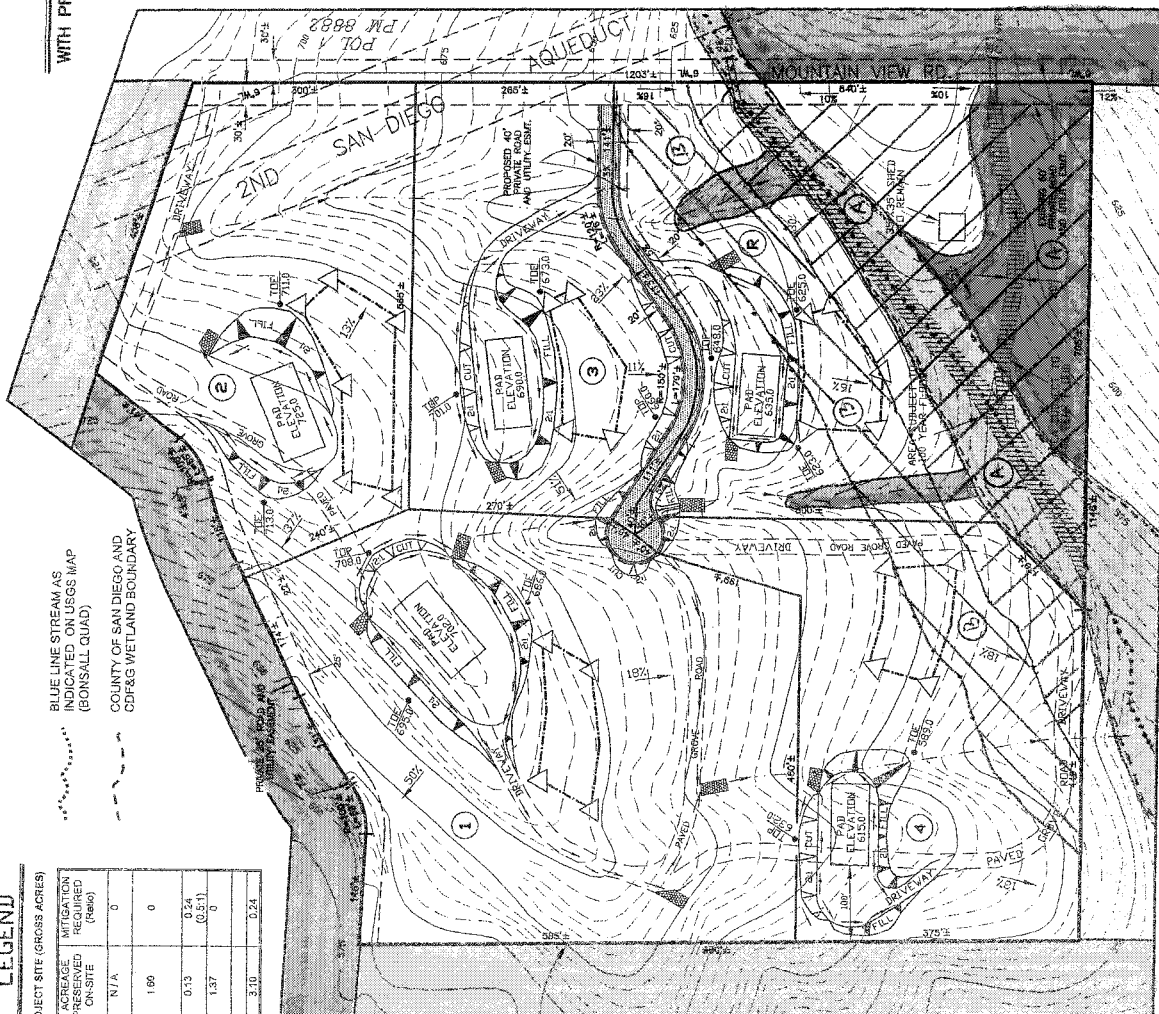
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FALLBROOK, CALIFORNIA 92028  
(760) 728-1134

## LEGEND

- ORCHARDS AND VINEYARDS  
HOLLAND CODE 18100
- CHAMISE CHAPARRAL  
HOLLAND CODE 37210
- ROW CROPS  
HOLLAND CODE 14320
- SOUTHERN COTTONWOOD-WILLOW  
HOLLAND CODE 61330
- DIEGAN COASTAL SAGE SCRUB  
HOLLAND CODE 33260
- SOUTHERN MIXED CHAPARRAL  
HOLLAND CODE 37120
- COAST LIVE OAK WOODLAND  
HOLLAND CODE 71160
- PROPOSED BIOLOGICAL OPEN SPACE  
EASEMENT INCLUDING BUFFER
- FUEL MODIFICATION ZONE - 100'



## LEGEND

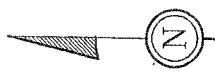
EXISTING, IMPACTED, AND PRESERVED HABITAT ON THE PROJECT SITE (GROSS ACRES)

PLANT COMMUNITY	ACREAGE ON-SITE	IMPACTED ACREAGE OFF-SITE	ACREAGE PRESERVED ON-SITE	MITIGATION REQUIRED (RM90)
ORCHARDS AND VINEYARDS	28.42	N/A	N/A	0
SOUTHERN COTTONWOOD-WILLOW RIPARIAN FOREST	1.60	0	1.60	0
SOUTHERN MIXED CHAPARRAL	0.61	0.48	0	0.13
COAST LIVE OAK WOODLAND	1.37	0	1.37	0.24
<b>TOTAL</b>	<b>30.0</b>	<b>0.48</b>	<b>3.10</b>	<b>0.24</b>



NOTE:  
VEGETATION COMMUNITY MAPPING IS PREPARED USING OVERLAYS OF CURRENT AERIAL PHOTOGRAPHS AND IS VERIFIED ON THE GROUND TO THE GREATEST EXTENT POSSIBLE. ALL VEGETATION AREA BOUNDARIES ARE SUBJECT TO FINAL DETERMINATION BY A PROFESSIONAL LAND SURVEYOR.

"PROJECT BOUNDARY"  
"100' OFFSITE"



GRAPHIC SCALE: 1" = 100'

